UNITED STATES GOVERNMENT

memorandum

DATE: July 12, 1994

REPLY TO
ATTN OF: Deputy Chief, Land Mobile & Microwave Division

SUBJECT: July 11, 1994 ex parte Presentation

On July 11, 1994, officials from the Commission's Private Radio Bureau (PRB) met with various trade group representatives to discuss PR Docket 92-235. At that time, the PRB staff provided the attached hand-outs. For further information, call Doron Fertig at (202) 632-6497.

Option: **150-174 MHz Band - 7.5 kHz Channel spacing with 12.5 kHz bandwidth equipment.**

- o Requires 18-20 Mile adjacent channel separation from 12.5 kHz equipment
- o Greater adjacent channel separation needed between 12.5 kHz assignment and current 25 kHz equipment

Benefits: 10-35% increase in assignable channels, with a slightly greater increase in mobiles, depending on geographic market.

Least gain where channels are currently most crowded

Bigger gains possible if significantly reshuffle current licensees

Double the number of paper channels

Costs: Very difficult to adopt anything but 7.5 kHz equipment as second stage

220-222 MHz band is orphaned by any non-narrowband option

Little opportunity for channel stacking at second stage, if there is one

Direct costs are high if Commission attempts to reshuffle current licensees

At least 5 year delay to obtain the much larger potential gains from narrowband options

Quality not improved, in some cases may deteriorate

Option: 450-470 MHz Band: Channel spacing at 12.5 kHz with 12.5 kHz bandwidth equipment.

- o Major issue is treatment of currently secondary, low power channels

Benefits: Major gain is improved quality for low power users

Minor gain in quality for high powered users

Costs: Direct costs are low unless one attempts to reshuffle current licensees to create low power blocks and high power blocks as suggested by NABER

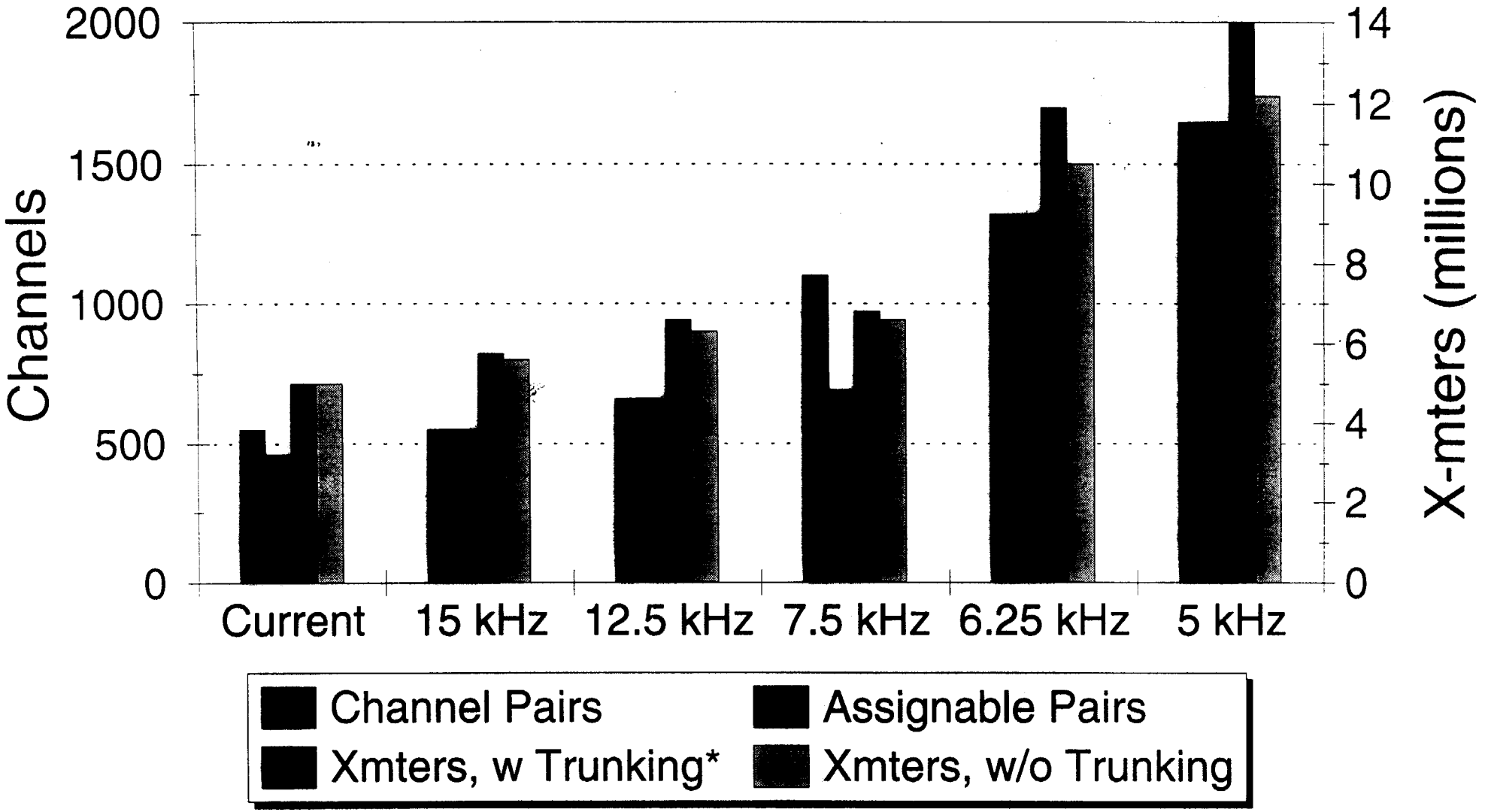
At least 5 year delay for much larger potential gains from other options

No gain in channels, particularly at border with Canada

Result of change from low power secondary use to primary status is a -20 to 0% change in numbers of mobiles (One high powered radio can wipe-out many low powered systems.)

Channels/Capacity in 150 MHz Band

(Maintaining Current Grade of Service

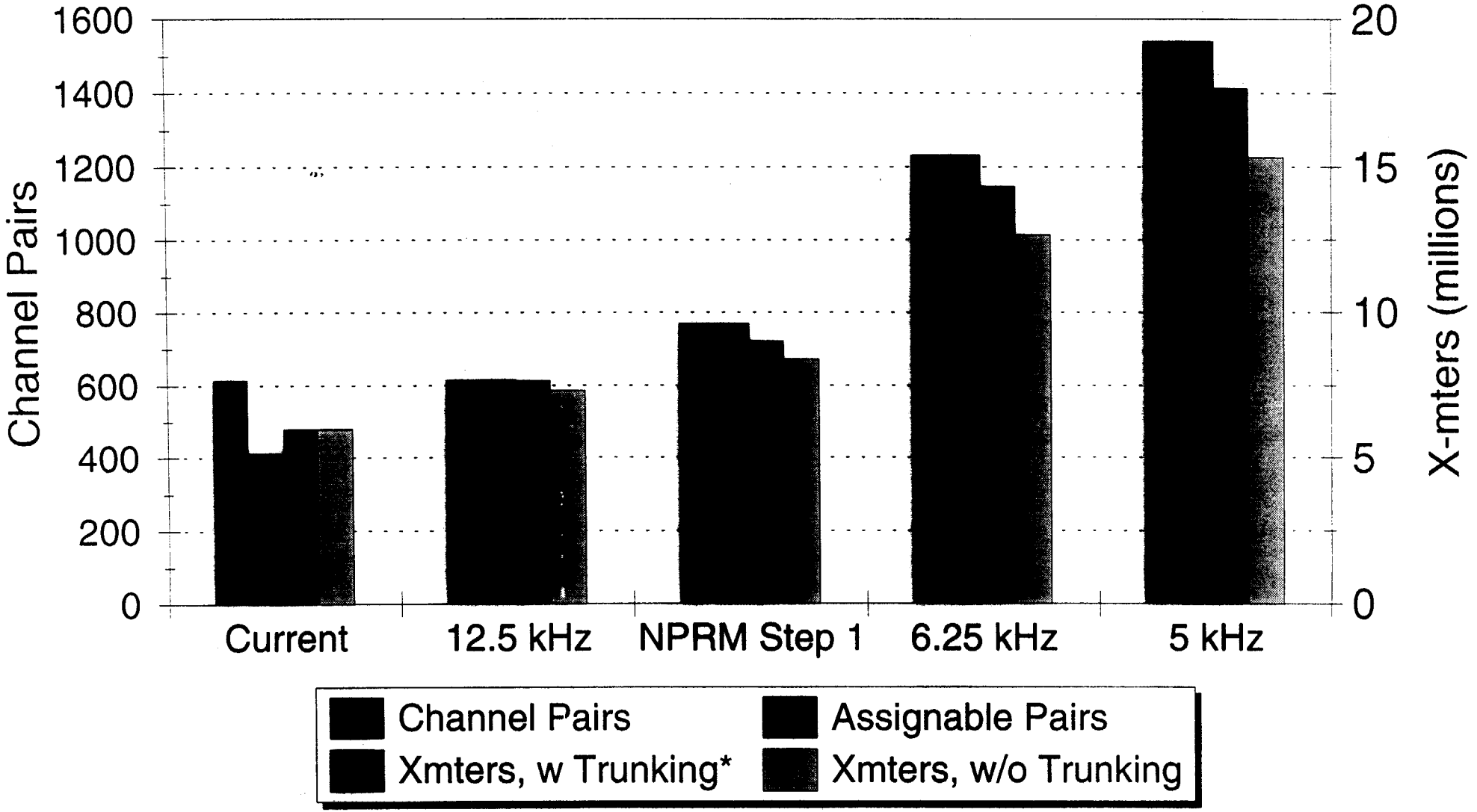


Assumptions: 60% currrently at capacity,
**50% of new channels trunked, 50% gain from trunking

Chart 1

Channels/Capacity in 450 MHz Band

(Maintaining Current Grade of Service)



Assumptions: 67% currently at capacity, *50% of new channels trunked, 50% gain from trunking, 50% underuse of offsets

Chart 2

Selected Spectrum Efficiencies

System	Country	Bandwidth (kHz)	Bit Rate (kbps)	Efficiency bits/s/Hz
D-AMPS	USA	30	48	1.6
TETRA	Europe	25	36	1.44
APCO 25	USA	12.5	9.6	0.77
APCO 25	USA	6.25	9.6	1.54
MIRS	USA/Japan	25	64	2.56
TTIB/QAM	UK/USA	5	9.6	1.92
64-QAM		5	22.8	4.56

The 1.2 bits/second/Hertz requirement for wideband systems is conservative and permits many reasonable technological options.

Sources: Comments of GEC-Marconi and Stone; Reply Comments of UPS.

Table xxx